

SD-01

AIR INJECTION APPARATUS FOR
A TURBOCHARGED DIESEL ENGINE

Abstract of the Disclosure

A supercharger injects air into the engine exhaust manifold of an engine to dramatically improve turbocharger boost at low engine speeds, while cooling the gases in the exhaust manifold to reduce NO_x formation. The injected air additionally reduces other exhaust emissions through secondary combustion, allowing the air/fuel ratio to be controlled closer to the stoichiometric ratio for improved thermodynamic efficiency. The engine is particularly well suited to high torque, low speed applications, such as a vehicle hydrostatic drive in which the engine is connected to drive a variable capacity hydrostatic pump at a low and substantially constant speed.